Remarks

Reconsideration of the present application is respectfully requested in view of the following remarks. Claims 1, 2, 4-8, 10-23, and 26-42 are pending in the application. Claims 1 and 21-23 are independent. Claim 1, 2, 4, 10, 14, 18, 20-23, 26, 28-30, and 33-42 have been rejected. These rejections are respectfully traversed. Claims 5-8, 11-13, 15-17, 19, 27, 31, and 32 have been objected to. No claims have been amended.

Patentability of Claims 5-8, 11-13, 15-17, 19, 27, and 31-32

Claims 5-8, 11-13, 15-17, 19, 27, and 31-32 have been objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and all intervening claims. Applicants appreciate the indication of allowable subject matter. These claims should be allowed in view of the allowability of their parent claim 1 as explained below.

Patentability of Claims 1, 2, 4, 10, 14, 18, 20-23, 26, 28-30, and 33-42 over Hellestrand under 35 U.S.C. § 102

Claims 1, 2, 4, 10, 14, 18, 20-23, 26, 28-30, and 33-42 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,263,302 to Hellestrand et al. ("Hellestrand"). These rejections are respectfully traversed.

Independent Claims 1 and 21

Independent claim 1 is directed to a method and independent claim 21 is directed to a machine readable storage medium having stored thereon machine executable instructions to

implement a method, both of which require: "retrieving state configuration information from a state server of a hardware/software co-simulation" (emphasis added). For example, the present application at page 12, line 22, to page 13, line 2, states: "[i]n various embodiments, the present invention retrieves the state configuration information (such as memory allocation and symbol type) from a state server and provides other clients access to the corresponding software states stored in memory based on the retrieved configuration information."

Hellestrand is not understood to teach or suggest retrieving state configuration information from a state server of a hardware/software co-simulation. For example, Hellestrand is understood to describe at col. 10, lines 4-14, an interface mechanism that enables communication between a process simulator and a hardware simulator, such as when an event requires interaction of a user program with target digital circuitry. Such events can be times when a user program encounters an input/output instruction or when the program has an arithmetic exception during execution. Applicants respectively note, however, that Hellestrand is not understood to describe anything suggesting state configuration information or a state server, much less retrieving state configuration information from a state server of a hardware/software co-simulation, as required by independent claims 1 and 21.

Independent claims 1 and 21 also require: "the state configuration information comprises memory mapping, symbol allocation, and symbol type" (emphasis added). For example, the present application at page 8, lines 7-8, states: "[m]emory space mapping, symbol table allocation, and symbol type all need to be used together to read the value of a software variable stored in memory."

Hellestrand is not understood to teach or suggest state configuration information that comprises memory mapping, symbol allocation, and symbol type. For example, Hellestrand

describes at col. 11, lines 25-31, the use of hooks to invoke a memory allocation simulator. A hook is generally understood in the art to be "[a] location in a routine or program in which the programmer can connect or insert other routines for the purpose of debugging or enhancing functionality" (Microsoft Computer Dictionary, 5th Ed.). More particularly, hooks are generally used in situations requiring re-direction of dynamic memory allocation. Thus, Hellestrand is not understood to teach or suggest state configuration information comprising memory mapping, symbol allocation, and symbol type, as required by independent claims 1 and 21.

Therefore, Hellestrand does not teach or suggest the requirements of independent claims 1 and 21. Accordingly, Applicants respectfully request that the 35 U.S.C. § 102(e) rejections be withdrawn from independent claims 1 and 21.

Dependent Claims 2, 4, 10, 14, 18, 26, 28-20, and 33-42

Dependent claims 2, 4, 10, 14, 18, 26, 28-30, and 33-42 depend directly or indirectly from parent claim 1, and are allowable for at least the reasons recited above in support of parent claim 1. They are also independently patentable. Accordingly, Applicants respectfully submit that the 35 U.S.C. § 102(e) rejections of dependent claims 2, 4, 10, 14, 18, 26, 28-30, and 33-42 should be withdrawn.

Independent Claims 20 and 22

Independent claim 20 is directed to a method and independent claim 22 is directed to a machine readable storage medium having stored thereon machine executable instructions, execution of said machine executable instructions to implement a method, both of which require: "accessing a software state from a hardware simulation process in a hardware/software co-

simulation" and "providing access to the software state to a client of the hardware/software co-simulation" (emphasis added). For example, the present application at page 8, lines 9-14, states:

> [T]o access a software state from a hardware process of a hardware/software co-simulator, one or more memory addresses corresponding to the software state need to be identified, one or more memory locations need to be accessed based on the address(es), data bits occupying the memory location(s) need to be assembled in a particular manner, and the assembled data need to be interpreted according to the type of variable.

Hellestrand is not understood to teach or suggest accessing a software state or providing access to the software state. For example, Hellestrand is understood to describe at col. 10, lines 4-14, an interface mechanism that enables communication between a process simulator and a hardware simulator, such as when an event requires interaction of a user program with target digital circuitry. Such events can be times when a user program encounters an input/output instruction or when the program has an arithmetic exception during execution. Applicants respectfully note, however, that Hellestrand is not understood to teach or suggest accessing a software state from a hardware simulation process in a hardware/software co-simulation or providing access to the software state to a client of the hardware/software co-simulation, as required by independent claims 20 and 22.

Therefore, Hellestrand does not teach or suggest the requirements of independent claims 20 and 22. Accordingly, Applicants respectfully request that the 35 U.S.C. § 102(e) rejections be withdrawn from independent claims 20 and 22.

Independent Claim 23

Independent claim 23 is directed to an apparatus and requires: "a hardware/software co-simulator to retrieve state configuration information from a state server" and "a unified memory store, said hardware/software co-simulator to provide a client access to a server state of the state server within the unified memory store based on the state configuration information" (emphasis added).

Hellestrand is not understood to teach or suggest retrieval of state configuration information from a state server or proving a client with access to a server state of a state server. For example, Hellestrand is understood to describe at col. 10, lines 4-14, an interface mechanism that enables communication between a process simulator and a hardware simulator, such as when an event requires interaction of a user program with target digital circuitry. Such events can be times when a user program encounters an input/output instruction or when the program has an arithmetic exception during execution. Applicants respectfully note, however, that Hellestrand is not understood to teach or suggest a hardware/software co-simulator to retrieve state configuration information from a state server and a unified memory store, said hardware/software co-simulator to provide a client access to a server state of the state server within the unified memory store based on the state configuration information, as required by independent claim 23.

Therefore, Hellestrand does not teach or suggest the requirements of independent claim 23. Accordingly, Applicants respectfully request that the 35 U.S.C. § 102(e) rejection be withdrawn from independent claim 23.

Examiner Interview Summary

Applicants thank Examiner Sharon for participating in an Examiner Interview on July 22, 2005. Claims 1 and 20-23 and Hellestrand were discussed. Agreement was not reached.

Conclusion

The claims in their present form should be allowed. Such action is respectfully requested.

Respectfully submitted,

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